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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,594	12/13/2001	Jurgen Schredl	70408	7149
23872	7590	12/14/2007	EXAMINER	
MCGLEW & TUTTLE, PC			KERNS, KEVIN P	
P.O. BOX 9227			ART UNIT	PAPER NUMBER
SCARBOROUGH STATION			1793	
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			12/14/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<p align="center"><b>Office Action Summary</b></p>	<p><b>Application No.</b></p> <p>10/020,594</p>	<p><b>Applicant(s)</b></p> <p>SCHREDL ET AL.</p>	
	<p><b>Examiner</b></p> <p>Kevin P. Kerns</p>	<p><b>Art Unit</b></p> <p>1793</p>	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 July 2007 and 09 October 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 12 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/485,426.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Objections*

1. Claims 12 and 17 are objected to because of the following informalities:  
throughout claims 12 and 17, it is believed that all instances of "metallization" be replaced with "metallizations" for consistency. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to independent claims 1, 12, and 17, it is unclear what is meant by "active spacing metallizations". How does "active" differ from non-active or conductive?

With regard to claim 7, the phrase "can be" is indefinite, as "can be" recites an optional function of being "moved". It is suggested to replace "can be" with "is" to more distinctly define this limitation in the claim.

Claim 8 recites the limitation "the conductive adhesive compound". There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the conductive adhesive mass". There is insufficient antecedent basis for this limitation in the claim.

With regard to claim 18, it is unclear what is meant by the claim language "a substantially homogenous or uniform solder material content said melting of a portion...", and it is believed that at least a ",", should be added before "said" for clarity.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-4, 12-15, and 17-20 insofar as definite (in view of the 35 USC 112, 2nd paragraph rejections) are rejected under 35 U.S.C. 103(a) as being unpatentable over Myers et al (US 5,400,950) in view of Gotman (US 4,404,453).

Myers et al. disclose a process of connecting two substrates comprising the steps of applying solder material to terminal areas of a first substrate to form electrically conductive (and "active") spacing metallizations with solder material in direct contact with terminal areas (col. 1, lines 50-65; and col. 6, lines 34-40). Myers et al. lack the mentioning of partial fusion of the spacing metallization(s).

However, Gotman discloses using laser energy to partially melt the solder (col. 3, lines 19-22) for the purpose of avoiding or minimizing any damage to the parts being attached together (col. 2, lines 35-40). In addition, Gotman discloses heating the solder (72) to become partially liquefied and then fusion takes place, which is during the bonding action (col. 4, lines 18-36).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to provide a laser heating means to partially melt the solder, as taught by Gotman, in the process disclosed by Myers et al., in order to prevent any damage to the parts.

7. Claims 5-9 insofar as definite (in view of the 35 USC 112, 2nd paragraph rejections) are rejected under 35 U.S.C. 103(a) as being unpatentable over Myers et al. (US 5,400,950) in view of Leicht et al. (U.S. 5,551,627).

Myers et al. disclose the claimed invention above, but lack the adhesives.

However, Leicht et al. disclose the process for producing a contact structure for connecting two substrates, comprising the steps of applying solder material to terminals

to form spacing metallizations, wherein an adhesive compound is applied to the solder (col. 4, lines 40-51) for the purpose of being more capable of resisting fatigue.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to apply adhesives, as taught by Leicht et al., in the process disclosed by Myers et al., in order to resist fatigue.

8. Claims 10, 11, and 16 insofar as definite (in view of the 35 USC 112, 2nd paragraph rejections) are rejected under 35 U.S.C. 103(a) as being unpatentable over Myers et al. (US 5,400,950) in view of Beddingfield et al. (US 5,710,071).

Myers et al. disclose the claimed invention above, but fail to teach filling the gap between the substrates with a filler material.

However, Beddingfield et al. disclose applying a filler (encapsulant) material in the gap of the substrates for the purpose of expelling any trapped air and to prevent the chip from warping (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to have filler material in between the substrates, as taught by Beddingfield et al., in the process disclosed by Myers et al., in order to expel air and prevent warping.

### ***Response to Arguments***

9. The examiner acknowledges the applicants' after final amendment entered upon filing of the request for continued examination, which were received by the USPTO on

July 30, 2007 and October 9, 2007, respectively. Upon review, new claim objections and 35 USC 112, 2nd paragraph rejections are raised in above sections 1 and 3.

Claims 1-20 remain under consideration in the application.

10. Applicants' arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

With regard to the applicants' remarks/arguments on pages 7-11 of the after final amendment of July 30, 2007, the applicants' arguments are as follows: 1) depend upon the limitation "active" of independent claims 1, 12, and 17; and 2) attack the references individually, rather than what one of ordinary skill in the art would have recognized in the combined teachings. 1) During patent examination, the pending claims must be "given the broadest reasonable interpretation.". Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969). In the instant case, the broadest reasonable interpretation of the term "active" would apply to any feature with a purpose/use in the claimed process, which would include all components, whether "conductive", "non-conductive" etc. In applying the *Prater* test by giving the claims their broadest reasonable interpretation, it is the examiner's position that "active" of independent claims 1, 12, and 17 do not distinguish over the prior art. 2) In response to the applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are

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based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

### **Conclusion**

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jonathan Johnson can be reached on (571) 272-1177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin P. Kerns *Kevin Kerns* 12/12/07  
Primary Examiner  
Art Unit 1793

*KPK*

kpk

December 12, 2007